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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,566

01/13/2006

Michael Daniels

TFEL0001

2026

30438

7590

04/14/2009

SMYRSKI LAW GROUP, A PROFESSIONAL CORPORATION  
3310 AIRPORT AVENUE, SW  
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EXAMINER

PATEL, VINOD D

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

04/14/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,566	<b>Applicant(s)</b> DANIELS ET AL.	
	<b>Examiner</b> Vinod D. Patel	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 12, 13 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12-13, 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/17/09 has been entered.

***Arguments/Amendments***

2. Applicant's arguments/amendments have been fully considered but they are not persuasive as for the following reason:

3. The text of those sections of Title 35, U.S. Code not included in this section can be found in the previous office action.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-3, 12-13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mills (US4677281) in view of Gordon Jr (US3222497) and further in view of Sopory (US6492629)..

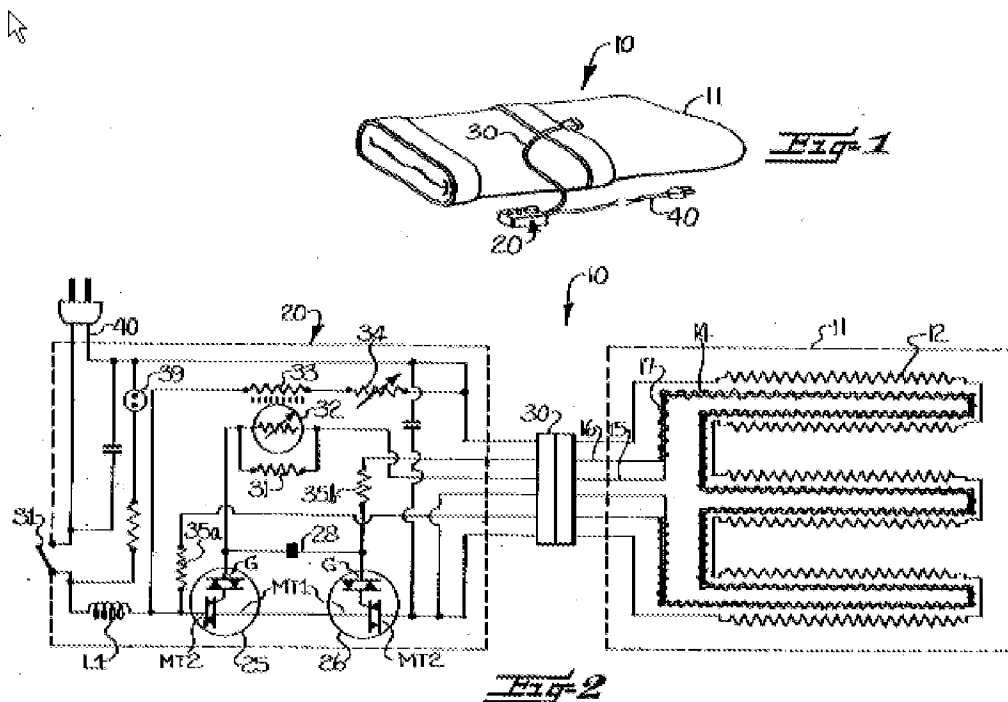
Mills discloses a heating cable (Figure 2, column 3-4) comprising a first conductor (14) comprising a pair of conductors (15,16) which extends along the length of the cable; a second conductor (12) which extends along the length of the cable; a separation layer (17) which extends along the length of the cable and is interposed between the pair of conductors (15, 16), an outer insulating jacket (column 4, line 9, US 3222497) extending along the length of the cable and around the first and second conductors and the separation layer wherein the first and second conductors generate heat when passing current and are connected at a first end of the cable in series such that current can flow in both directions through the first and second conductors, the first and second conductors are connected at a second end of the cable to an AC power supply equal currents flow in opposite directions through adjacent portions of the first and second conductors, and wherein the separation layer is formed such that the separation layer has a negative temperature characteristic, and the first conductor is formed such that the first conductor has a positive temperature characteristic (column 6, line 51-51) reduces with increasing temperatures. Mills discloses a heating cable (Figure 3) comprising a first conductor (14') which extends along the length of the cable; a second conductor (12) which extends along the length of the cable; and an outer insulating jacket (column 4, line 9, US 3222497) extending along the length of the cable

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and around the first and second conductors wherein the first and second conductors are connected at one end of the cable in series such that current can flow in both directions through the conductors, the first and second conductors are connected at the other end of the cable to respective poles of an AC power supply equal currents flow in opposite directions through adjacent portions of the conductors, and the first conductor is formed such that it has a positive temperature characteristic (column 6, lines 40-55).

Mills does not disclose a separation layer in Figure 3 which extends along the length of the cable and is interposed between the first and second conductors; the separation layer has a negative temperature characteristic.

Mills does disclose a separation layer in Figure 2 which extends along the length of the cable and is interposed between the first and second conductors; the separation layer has a negative temperature characteristic.



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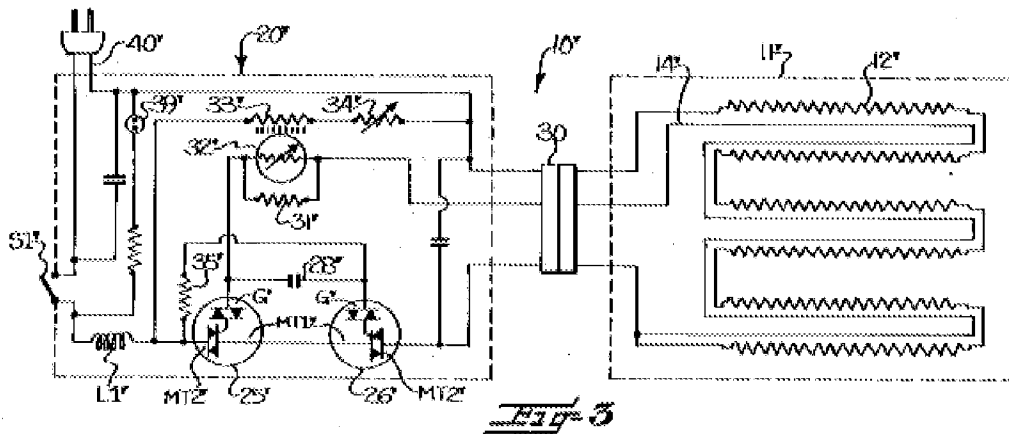
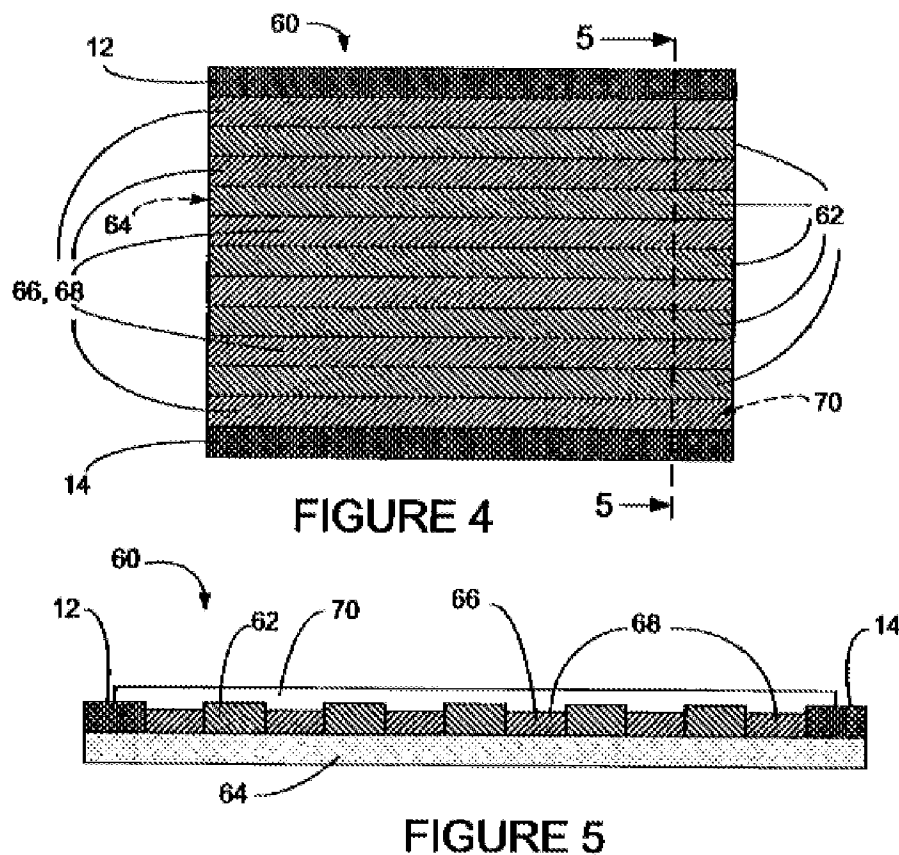


Fig. 3



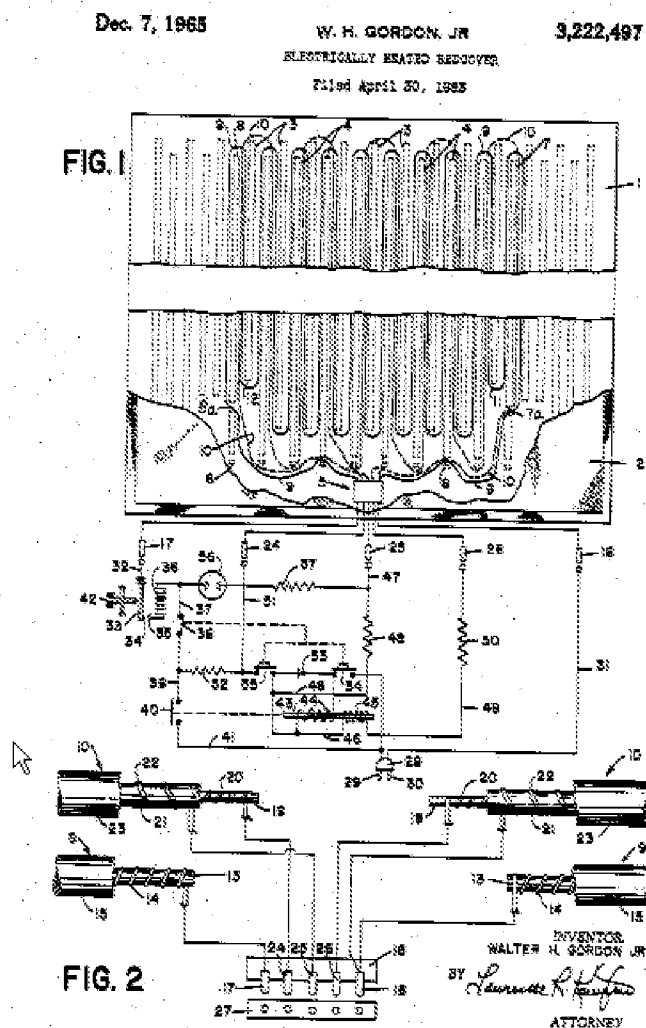
With respect to claim 2, the first and second conductors are coaxial and the separation layer is tubular, the first conductor being located inside the tubular separation layer and the second conductor being located outside the tubular separation layer (column 4, line 9, US 3222497).

With respect to claim 3, the first conductor is formed from twisted together components each of which comprises a fibre core (column 4, line 9, US 3222497) around which a positive temperature coefficient wire has been wrapped to form a helix.

With respect to claim 12, the second conductor is a heating wire wrapped around the tubular separation layer to form a helix.

With respect to claim 13, the second conductor is a heating wire wrapped around the tubular separation layer to form a helix.

With respect to claim 17, the separation layer is formed such that the separation layer melts if heated to a predetermined threshold temperature.



Gordon discloses a sensor wire.

Sopory teaches (column 2, lines 39-52, Figure 4) use of PTC and NTC or ZTC and/or VSM material for use in protection of electrical circuits.



It would have been obvious to one of ordinary skilled in the art at the time of invention to use a sensor wire as taught by Gordon Jr and a separation layer between two conductors as taught by Sopory in order to protect electrical circuit for the heating cable of Mills by using PTC conductor and NTC separation layer.

***Remarks***

6. Applicant's arguments with respect to claims have been considered but they are moot in view of new grounds of rejection.

7. When filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06

("Applicant should \* \* \* specifically point out the support for any amendments made to the disclosure.").

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINOD D. PATEL whose telephone number is (571)272-4785. The examiner can normally be reached on 7.15 A.M. TO 3.45 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vinod D. Patel/ 4/3/09  
Examiner, Art Unit 3742

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742